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NATIONAL EUTROPHICATION SURVEY

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16. ABSTRACT

Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

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REPORT
ON
LAKE TALQUIN
GADSDEN AND LEON COUNTIES
FLORIDA

EPA REGION IV

WORKING PAPER No. 274

WITH THE COOPERATION OF THE

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

AND THE

FLORIDA NATIONAL GUARD

DECEMBER, 1977

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to freshwater lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point-source discharge reduction and non-point source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's fresh water lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by EPA and to augment plans implementation by the states.

ACKNOWLEDGMENT

The staff of the National Eutrophication Survey (Office of Research & Development, U. S. Environmental Protection Agency) expresses sincere appreciation to the Florida Department of Environmental Regulation for professional involvement and to the Florida National Guard for conducting the tributary sampling phase of the Survey.

Joseph W. Landers, Jr., Secretary of the Department of Environmental Regulation; John A Redmond, former Director of the Division of Planning, Technical Assistance, and Grants; and Dr. Tim S. Stuart, Chief of the Bureau of Water Quality, provided invaluable lake documentation and counsel during the survey, reviewed the preliminary reports, and provided critiques most useful in the preparation of this Working Paper series.

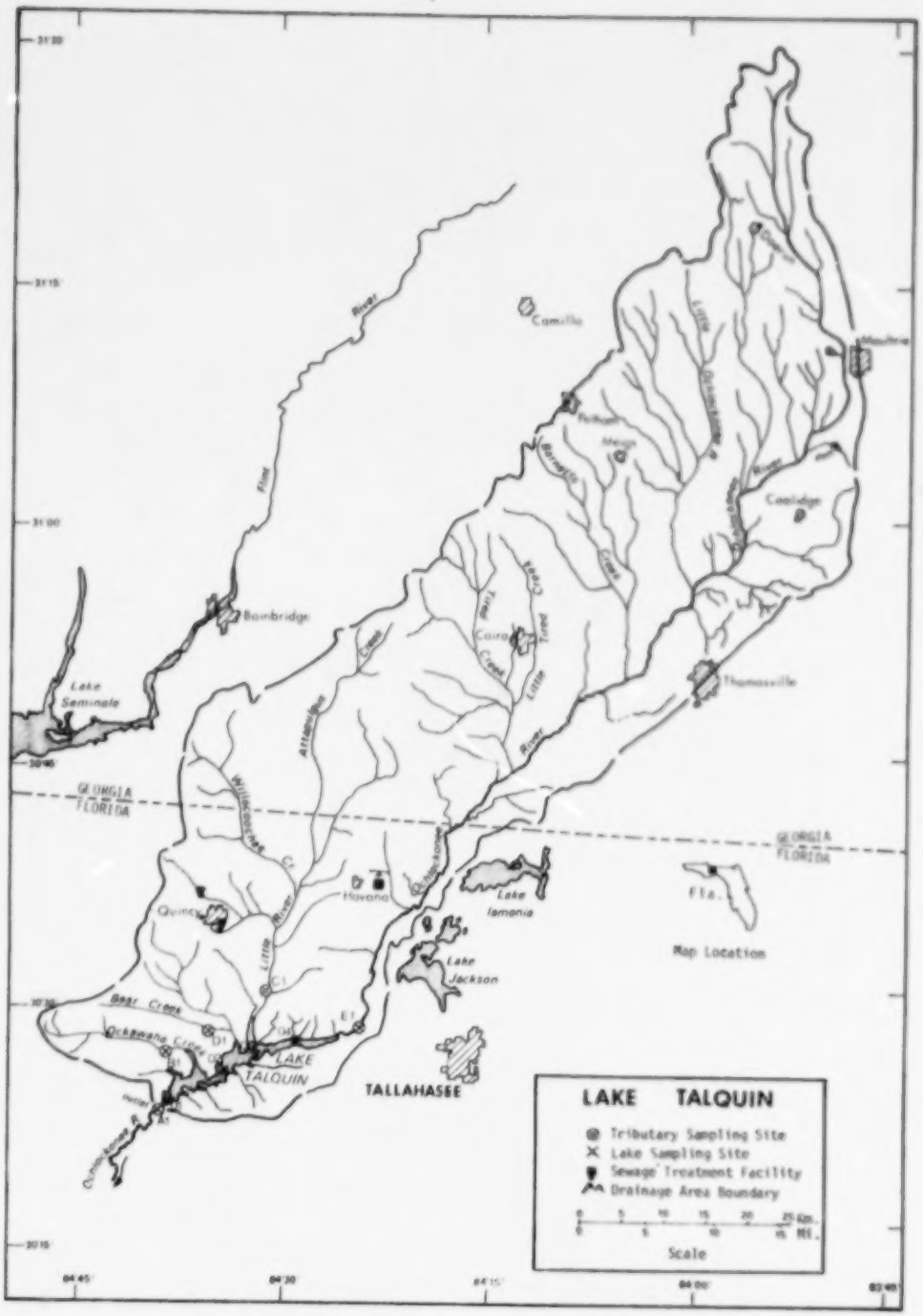
Major General Henry W. McMillan (Retired), then the Adjutant General of Florida, and Project Officer Colonel Hugo F. Windham, who directed the volunteer efforts of the Florida National Guard, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF FLORIDA

LAKE NAME	COUNTY
Alligator	Columbia
Apopka	Lake, Orange
Banana	Polk
Crescent	Flagler, Putnam
Doctors	Clay
Dora	Lake
East Tohopekaliga	Osceola
Effie	Polk
Eloise	Polk
George	Putnam, Volusia
Gibson	Polk
Glenada	Highlands
Griffin	Lake
Haines	Polk
Hancock	Polk
Horseshoe	Seminole
Howell	Orange, Seminole
Istokpoga	Highlands
Jessie	Polk
Jessup	Seminole
Kissimmee	Osceola
Lawne	Orange
Lulu	Polk
Marion	Polk
Minnehaha	Orange
Minneola	Lake
Monroe	Seminole, Volusia
Munson	Leon
Okeechobee	Glades, Hendry, Martin, Okeechobee, Palm Beach
Poinsett	Brevard, Orange, Osceola
Reedy	Polk
Seminole	Jackson, FL; Decatur, Seminole, GA
Seminole	Pinellas
South	Brevard
Talquin	Gadsden, Leon
Tarpon	Pinellas
Thonotosassa	Hillsborough
Tohopekaliga	Osceola
Trout	Lake
Weohyakapka	Polk
Yale	Lake


Camilla
Flint River
Bainbridge
Lake Seminole
Attapulgus Creek
Little River
Cairo
Thomasville
Coolidge
GEORGIA
FLORIDA
Quincy
Havana
Lake Iamonia
Lake Jackson
Bear Creek
Ochlawaha Creek
LAKE TALQUIN
TALLAHASEE
Fla.
Map Location
LAKE TALQUIN
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
Drainage Area Boundary
Scale

LAKE TALQUIN

STORET NO. 1239

I. CONCLUSIONS

A. Trophic Condition:

Survey data indicate Lake Talquin is eutrophic. It ranked twenty-first in overall trophic quality when the 41 Florida water bodies sampled in 1973 were compared using a combination of six parameters*. Seventeen water bodies had less and one had the same median total phosphorus, 19 had less median ortho-phosphorus, 31 had less and one had the same median inorganic nitrogen, seven had less mean chlorophyll a, and nine had greater mean Secchi disc transparency. Marked depression of dissolved oxygen with depth occurred at station 1 in June and at station 2 in August.

Survey limnologists observed beds of macrophytes in the shallow protected areas of the lake.

B. Rate-Limiting Nutrient:

The algal assay results indicate Lake Talquin was nitrogen limited at the time the sample was collected (06/20/73). The lake data also indicate nitrogen limitation, except for station 3 in August.

C. Nutrient Controllability:

1. Point sources--It is estimated that the six municipal point sources considered in this report accounted for 20.2% of the total phosphorus and 7.2% of the total nitrogen inputs to

* See Appendix A.

Lake Talquin during the sampling year. The four Georgia point sources (Cairo, Moultrie, Pelham, and Thomasville; see map, page v), are well beyond the 40-km limit of the Survey*. However, it is assumed that all of the nutrient loads from those sources reached the lake during the sampling year.

The sampling year phosphorus loading of 6.01 g/m^2 is over five times that proposed by Vollenweider (Vollenweider and Dillon, 1974) as a eutrophic loading. However, even complete removal of phosphorus at the six municipal point sources would still leave a loading of 4.79 $g/m^2/yr$ (over four times the eutrophic loading; and although Florida lakes may assimilate phosphorus at higher levels than those suggested by Vollenweider (see page 12), it does not seem likely that the degree of phosphorus reduction attainable by municipal point source control would result in a significant improvement in the condition of Lake Talquin.

2. Non-point sources--It is estimated that non-point sources contributed 79.7% of the total phosphorus and 92.6% of the total nitrogen inputs to Lake Talquin during the sampling year. The Ochlockonee and Little rivers collectively accounted for nearly 73% of the phosphorus and about 80% of the nitrogen.

According to Harris et al. (1972), land use in the Lake Talquin watershed is predominately agricultural, and they report that water quality problems have resulted from feedlot runoff. Also, there are Miocene outcrops with workable phosphorus deposits in the Georgia portion of the Ochlockonee River drainage as well as the headwaters of Attapulgus Creek, a tributary of the Little River (Telfair, 1976).

* See Working Paper No. 175, "...Survey Methods, 1973-1976".

II. LAKE AND DRAINAGE BASIN CHARACTERISTICS†

A. Morphometry††:

1. Surface area: 43.70 kilometers².
2. Mean depth: 2.8 meters.
3. Maximum depth: 15.0 meters.
4. Volume: 122.360 x 10^6 m^3.
5. Mean hydraulic retention time: 30 days.

B. Tributary and Outlet:
(See Appendix C for flow data)

1. Tributaries -

Name	Drainage area (km^2)*	Mean flow (m^3/sec)*
Ockawaha Creek	86.0	1.43
Little River	844.3	12.03
Bear Creek	30.8	0.51
Ocklockonee River	3,030.3	29.48
Minor tributaries & immediate drainage -	300.4	3.95
Totals	4,291.8	47.40

2. Outlet -

Ochlockonee River	4,335.5**	47.39

C. Precipitation***:

1. Year of sampling: 208.0 centimeters.
2. Mean annual: 144.4 centimeters.

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† Table of metric conversions--Appendix B.
†† Harriss, et al., 1972.
* For limits of accuracy, see Working Paper No. 175, "...Survey Methods, 1973-1976".
** Total drainage area adjusted to equal sum of subdrainage areas plus area of lake.
*** See Working Paper No. 175.

III. WATER QUALITY SUMMARY

Lake Talquin was sampled three times during 1973 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from four stations on the lake and usually from two or more depths at each station (see map, page v). During each visit, a single depth-integrated (4.6 m or near bottom to surface) sample was composited from the stations for phytoplankton identification and enumeration; and during the first visit, a single 18.9-liter depth-integrated sample was collected from each of the stations for chlorophyll *a* analysis. The maximum depths sampled were 9.4 meters at station 1, 9.1 meters at station 2, 6.4 meters at station 3, and 1.2 meters at station 4.

The sampling results are presented in full in Appendix D and are summarized below.

A. SUMMARY OF PHYSICAL AND CHEMICAL CHARACTERISTICS FOR LAKE TALQUIN
STORET CODE 1239

PARAMETER	1ST SAMPLING (6/20/73) 4 SITES RANGE	MEAN	MEDIAN	2ND SAMPLING (8/31/73) 4 SITES RANGE	MEAN	MEDIAN	3RD SAMPLING (11/ 5/73) 4 SITES RANGE	MEAN	MEDIAN
TEMP (C)	25.1 - 29.5	27.0	26.7	27.5 - 30.0	28.9	28.8	18.8 - 21.1	20.1	20.6
DISS OXY (MG/L)	1.6 - 5.9	3.5	3.4	0.6 - 16.6	4.7	4.7	4.2 - 9.2	6.3	6.6
CNDCTVY (MCROMO)	50. - 58.	51.	50.	57. - 101.	65.	60.	42. - 152.	77.	58.
PH (STAND UNITS)	6.2 - 8.3	6.6	6.3	6.2 - 7.0	6.5	6.4	6.7 - 7.2	7.0	7.0
TOT ALK (MG/L)	10. - 17.	13.	10.	10. - 20.	12.	11.	10. - 39.	16.	12.
TOT P (MG/L)	0.103 - 0.141	0.122	0.121	0.045 - 0.136	0.073	0.068	0.057 - 0.183	0.087	0.075
ORTHO P (MG/L)	0.024 - 0.048	0.036	0.037	0.014 - 0.062	0.030	0.023	0.014 - 0.062	0.032	0.030
NO2+NO3 (MG/L)	0.100 - 0.190	0.144	0.150	0.070 - 0.480	0.199	0.120	0.030 - 0.230	0.082	0.075
AMMONIA (MG/L)	0.140 - 0.220	0.197	0.210	0.070 - 0.520	0.200	0.150	0.040 - 0.140	0.081	0.070
KJEL N (MG/L)	0.500 - 1.000	0.693	0.700	0.600 - 1.200	0.846	0.800	0.200 - 0.700	0.333	0.300
INORG N (MG/L)	0.240 - 0.410	0.345	0.370	0.140 - 0.790	0.399	0.290	0.070 - 0.290	0.162	0.180
TOTAL N (MG/L)	0.630 - 1.102	0.841	0.860	0.700 - 1.380	1.045	1.140	0.270 - 0.770	0.415	0.400
CHLRPYL A (UG/L)	0.7 - 4.4	2.3	1.7	4.6 - 48.6	20.6	14.6	4.0 - 7.5	5.5	5.3
SECCHI (METERS)	0.5 - 0.8	0.6	0.6	0.8 - 1.0	0.9	0.9	1.2 - 1.5	1.4	1.3

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B. Biological characteristics:

1. Phytoplankton -

Sampling Date	Dominant Genera	Algal Units per ml
06/20/73	1. Cyclotella sp.	585
	2. Flagellates	502
	3. Scenedesmus sp.	84
	4. Dinoflagellates	84
	5. Asterionella sp.	84
	Other genera	293
	Total	1,632
08/31/73	1. Melosira sp.	6,545
	2. Flagellates	1,771
	3. Cyclotella sp.	1,771
	4. Dactylococcopsis sp.	1,078
	5. Navicula sp.	1,001
	Other genera	2,772
	Total	14,938
11/05/73	1. Melosira sp.	5,619
	2. Flagellates	1,463
	3. Cyclotella sp.	308
	4. Chroococcus sp.	154
	5. Scenedesmus sp.	154
	Other genera	618
	Total	8,316

2. Chlorophyll a -

Sampling Date	Station Number	Chlorophyll a (µg/l)
06/20/73	1	4.9
	2	2.1
	3	0.7
	4	1.4
08/31/73	1	48.8
	2	18.2
	3	4.6
	4	11.0
11/05/73	1	5.6
	2	5.0
	3	7.5
	4	4.0

C. Limiting Nutrient Study:

1. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.040	0.163	3.6
0.050 P	0.090	0.163	4.1
0.050 P + 1.0 N	0.090	1.163	23.7
1.0 N	0.040	1.163	14.8

2. Discussion -

The control yield of the assay alga, Selenastrum capricornutum, indicates that the potential primary productivity of Lake Talquin was moderately high at the time the assay sample was collected (06/20/73). The addition of nitrogen alone or in combination with orthophosphorus resulted in significantly increased yields, while the addition of orthophosphorus alone did not. This indicates nitrogen limitation.

The lake data also indicate nitrogen limitation at most sampling times; i.e., the mean inorganic nitrogen/orthophosphorus ratios were 13/1 or less at all stations and sampling times except for station 3 in August where the N/P ratio was 18/1, and phosphorus limitation would be expected.

IV. NUTRIENT LOADINGS
(See Appendix E for data)

For the determination of nutrient loadings, the Florida National Guard collected monthly near-surface grab samples from each of the tributary sites indicated on the map (page v). Sampling was begun in March, 1973, and was completed in February, 1974.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the Florida District Office of the U.S. Geological Survey for the tributary sites nearest the lake.

In this report, nutrient loads for sampled tributaries were determined by using a modification of a U.S. Geological Survey computer program for calculating stream loadings*. Nutrient loads shown are those measured minus point-source loads, if any.

Nutrient loads for unsampled "minor tributaries and immediate drainage" ("ZZ" of U.S.G.S.) were estimated using the nutrient loads in $kg/km^2/year$, at station D-1, and multiplying by the ZZ area in km^2.

The operator of the Quincy, FL, wastewater treatment plant provided monthly effluent samples and corresponding flow data. The operators of the Havana, FL, and the Cairo, Moultrie, Pelham, and Thomasville, GA, wastewater treatment plants did not participate; the nutrient loads from those sources were estimated at 1.134 P and 3.401 N/capita/year, and flows were estimated at 0.3785 m^3/capita/day.

The Georgia point sources are well beyond the 40-km limit of the Survey*; however, it is assumed that all of the nutrients from those sources reached the lake during the sampling year.

* See Working Paper No. 175.

A. Waste Sources:

1. Known municipal -

Name	Pop. Served	Treatment	Mean Flow (m^3/d)	Receiving Water
Quincy, FL†	8,272	tr. filter	2,869.9	Quincy Cr. to Little R.
Havanna, FL*	1,100	tr. filter	416.4	trib. to Ochlockonee R.
Cairo, GA**	5,000	tr. filter	1,892.5	trib. to Tired Cr.
Moultrie, GA**	16,195	tr. filter	6,129.8	Ochlockonee R.
Pelham, GA**	4,000	prim. clarifier	1,514.0	Town Br. to Little Ochlockonee R.
Thomasville, GA**	15,000	tr. filter	5,677.5	Bruces Br. to Ochlockonee R.

2. Industrial - Unknown.

† Treatment plant questionnaire.
* Telfair, 1976.
** Anonymous, 1971.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

Source	kg P/ yr	% of total
a. Tributaries (non-point load) -		
Ockawaha Creek	615	0.2
Little River	66,115	25.2
Bear Creek	1,435	0.5
Ochlockonee River	124,990	47.6
b. Minor tributaries & immediate drainage (non-point load) -	14,120	5.4
c. Known municipal STP's -		
Quincy, FL	6,280	2.4
Havana, FL	1,245	0.5
Cairo, GA	5,670	2.2
Moultrie, GA	18,365	7.0
Pelham, GA	4,535	1.7
Thomasville, GA	17,010	6.5
d. Septic tanks* -	135	< 0.1
e. Known industrial -	?	-
f. Direct precipitation** -	1,925	0.7
Total	262,440	100.0

2. Outputs -

Lake outlet - Ochlockonee River 139,420

3. Net annual P accumulation - 123,020 kg.

* Estimate based on 470 shoreline dwellings; see Working Paper No. 175.
** Brezonik and Shannon, 1971.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	kg N/yr	% of total
a. Tributaries (non-point load) -		
Ockawaha Creek	55,395	2.5
Little River	802,690	36.4
Bear Creek	17,730	0.8
Ochlockonee River	967,105	43.9
b. Minor tributaries & immediate drainage (non-point load) -	173,030	7.8
c. Known municipal STP's -		
Quincy, FL	18,265	0.8
Havana, FL	3,740	0.2
Cairo, GA	17,005	0.8
Moultrie, GA	55,080	2.5
Pelham, GA	13,605	0.6
Thomasville, GA	51,015	2.3
d. Septic tanks* -	5,010	0.2
e. Known industrial -	?	-
f. Direct precipitation** -	25,345	1.1
Total	2,205,015	100.0

2. Outputs -

Lake outlet - Ochlockonee River 1,735,985

3. Net annual N accumulation - 469,030 kg.

D. Non-point Nutrient Export by Subdrainage Area:

Tributary	kg P/km^2/yr	kg N/km^2/yr
Ockawaha Creek	7	644
Little River	78	951
Bear Creek	47	576
Ochlockonee River	41	319

* Estimate based on 470 shoreline dwellings; see Working Paper No. 175.
** Brezonik and Shannon, 1971.

E. Yearly Loads:

In the following table, the existing phosphorus loadings are compared to those proposed by Vollenweider (Vollenweider and Dillon, 1974). Note, however, that Florida lakes may be able to assimilate phosphorus at a somewhat higher level than that suggested by Vollenweider (Shannon and Brezonik, 1972).

Essentially, Vollenweider's "dangerous" loading is one at which the receiving water would become eutrophic or remain eutrophic; his "permissible" loading is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic loading would be considered one between "dangerous" and "permissible".

Vollenweider's model may not be applicable to water bodies with short hydraulic retention times.

	Total Phosphorus		Total Nitrogen	
	Total	Accumulated	Total	Accumulated
grams/m^2/yr	6.01	2.82	50.5	10.7

Vollenweider phosphorus loadings ($g/m^2/yr$) based on mean depth and mean hydraulic retention time of Lake Talquin:	
"Dangerous" (eutrophic loading)	1.12
"Permissible" (oligotrophic loading)	0.56

V. LITERATURE REVIEWED

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VI. APPENDICES

APPENDIX A

LAKE RANKINGS

LAKE DATA TO BE USED IN RANKINGS

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	SOB-MEAN SEC	MEAN CHLORA	IS-MIN DO	MEDIAN DISS ORTHO P
1201	ALLIGATOR LAKE	0.620	0.260	474.000	87.733	13.100	0.386
1202	LAKE APOPKA	0.102	0.230	484.176	46.611	8.200	0.019
1203	LAKE BANANA	0.660	0.260	482.667	208.600	3.600	0.293
1206	LAKE CRESCENT	0.065	0.130	473.889	10.211	10.200	0.033
1207	DOCTORS LAKE	0.084	0.120	465.555	27.100	10.400	0.028
1208	LAKE DORA	0.102	0.240	482.889	59.978	7.400	0.022
1209	LAKE EFFIE	1.480	0.410	489.000	261.433	15.000	0.950
1210	LAKE GEORGE	0.129	0.165	469.308	35.000	11.000	0.063
1211	LAKE GIBSON	0.167	0.115	478.000	19.675	10.200	0.069
1212	GLENADA LAKE	0.134	0.165	454.167	27.667	14.700	0.072
1214	LAKE GRIFFIN	0.119	0.260	481.333	66.855	6.600	0.038
1215	LAKE HAINES	0.063	0.115	462.667	26.567	10.600	0.014
1217	LAKE HANCOCK	0.772	0.195	483.500	97.900	5.600	0.158
1219	LAKE HORSESHOE	0.034	0.130	459.000	12.067	11.500	0.023
1220	LAKE HOWELL	1.260	0.285	464.000	54.117	9.000	1.175
1221	LAKE ISTOKPOGA	0.039	0.120	464.222	6.594	8.600	0.010
1223	LAKE JESSUP	0.492	0.290	487.000	76.550	7.600	0.288
1224	LAKE KISSIMMEE	0.034	0.145	463.667	24.142	8.800	0.007
1227	LAKE LILU	1.490	1.065	483.000	276.566	14.300	1.030
1228	LAKE MARION	0.044	0.260	468.833	29.967	7.600	0.016
1229	LAKE MINNEHAHA	0.038	0.080	435.000	8.733	7.700	0.012
1230	LAKE MINNEOLA	0.018	0.070	406.333	3.333	7.400	0.009
1231	LAKE MONROE	0.188	0.300	474.555	14.225	10.800	0.128
1232	LAKE OKEECHOBEE	0.063	0.185	472.366	14.524	9.800	0.010
1234	LAKE POINSETT	0.085	0.150	469.000	6.500	10.600	0.051
1236	LAKE REEDY	0.033	0.330	468.500	34.837	10.600	0.008
1238	LAKE SOUTH	0.074	0.130	464.000	23.167	9.000	0.020
1239	LAKE TALQUIN	0.085	0.290	462.167	9.483	14.480	0.031

LAKE DATA TO BE USED IN RANKINGS

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	SSD-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P
1240	LAKE THONOTOSASSA	0.695	0.895	466.167	37.700	10.200	0.565
1241	LAKE TOHOPEKALIGA	0.246	0.200	472.917	30.633	10.500	0.152
1242	TROUT LAKE	1.110	0.650	472.000	76.967	12.900	0.970
1243	LAKE WEOHYAKAPKA	0.047	0.080	458.667	7.767	8.200	0.011
1246	LAKE YALE	0.027	0.160	441.000	25.367	7.600	0.014
1247	LAKE MUNSON	1.475	0.925	486.667	140.317	12.200	0.852
1248	LAKE SEMINOLE	0.234	0.175	473.833	102.000	6.600	0.026
1249	LAKE LAWNE	2.560	1.350	494.667	84.980	10.400	0.117
1250	LAKE TARPON	0.041	0.070	488.889	6.867	9.000	0.027
1252	LAKE ELOISE	0.486	0.170	465.333	78.233	12.200	0.339
1258	LAKE JESSIE	0.051	0.090	452.667	26.300	10.000	0.011
1261	EAST LAKE TOHOPEKALIGA	0.042	0.070	440.833	5.167	9.400	0.007
1264	PAYNE'S PRAIRIE LAKE (NO	1.260	0.140	476.000	88.200	7.400	1.210

PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500+ MEAN SEC	MEAN CHLORA	15+ MIN DO	MEDIAN DISS ORTHO P	INDEX NO
1201	ALLIGATOR LAKE	25 (10)	20 (10)	30 (12)	10 (7)	10 (4)	10 (7)	130
1202	LAKE APOPKA	50 (20)	30 (15)	10 (4)	30 (15)	74 (29)	70 (28)	280
1203	LAKE BANANA	23 (9)	29 (10)	20 (8)	5 (2)	100 (40)	23 (9)	200
1206	LAKE CRESCENT	65 (26)	70 (27)	33 (13)	80 (32)	48 (18)	50 (20)	346
1207	DOCTORS LAKE	60 (24)	76 (30)	60 (24)	55 (22)	34 (12)	56 (22)	341
1208	LAKE DORA	53 (21)	35 (14)	18 (7)	33 (13)	90 (35)	60 (27)	297
1209	LAKE EFFIE	5 (2)	10 (4)	3 (1)	3 (1)	0 (0)	10 (4)	31
1210	LAKE GEORGE	45 (18)	54 (21)	48 (19)	43 (17)	23 (9)	43 (17)	256
1211	LAKE GIBSON	40 (16)	81 (32)	45 (18)	70 (28)	48 (18)	40 (16)	324
1212	GLENADA LAKE	43 (17)	54 (21)	85 (34)	53 (21)	3 (1)	38 (15)	276
1214	LAKE GRIFFIN	48 (19)	29 (10)	23 (9)	30 (12)	95 (38)	48 (19)	273
1215	LAKE HAINES	78 (28)	81 (32)	75 (30)	58 (23)	34 (12)	78 (31)	396
1217	LAKE HANCOCK	18 (7)	43 (17)	13 (5)	13 (5)	98 (39)	28 (11)	213
1219	LAKE HORSESHOE	93 (37)	78 (27)	80 (32)	78 (31)	20 (8)	65 (26)	486
1220	LAKE HOWELL	11 (4)	23 (9)	69 (27)	35 (14)	60 (23)	3 (1)	201
1221	LAKE ISTOKPOGA	85 (34)	76 (30)	65 (26)	93 (37)	69 (27)	89 (35)	477
1223	LAKE JESSUP	28 (11)	18 (7)	5 (2)	25 (10)	83 (32)	25 (10)	184
1224	LAKE KISSIMMEE	98 (36)	63 (25)	73 (29)	65 (26)	65 (26)	99 (39)	425
1227	LAKE LULU	3 (1)	3 (1)	15 (6)	0 (0)	8 (3)	5 (2)	34
1228	LAKE MARION	78 (31)	29 (10)	53 (21)	50 (20)	83 (32)	73 (29)	366
1229	LAKE MINNEHAHA	88 (35)	91 (36)	95 (38)	85 (34)	78 (31)	80 (32)	517
1230	LAKE MINNEOLA	100 (40)	98 (38)	98 (39)	100 (40)	90 (35)	93 (37)	579
1231	LAKE MONROE	38 (15)	15 (6)	28 (11)	75 (30)	26 (10)	33 (13)	215
1232	LAKE OKEECHOBEE	68 (27)	45 (18)	40 (16)	73 (29)	53 (21)	89 (35)	368
1234	LAKE POINSETT	58 (23)	60 (24)	50 (20)	95 (38)	34 (12)	45 (18)	342
1236	LAKE REEDY	95 (38)	13 (5)	55 (22)	45 (18)	34 (12)	95 (38)	337
1238	LAKE SOUTH	63 (25)	70 (27)	69 (27)	68 (27)	60 (23)	56 (22)	386
1239	LAKE TALQUIN	55 (22)	20 (8)	78 (31)	83 (33)	5 (2)	53 (21)	294

PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P	INDEX NO
1240	LAKE THONOTOSASSA	20 (8)	85 (34)	58 (23)	40 (16)	48 (18)	15 (6)	266
1241	LAKE TOHOPEKALIGA	33 (13)	40 (16)	38 (15)	48 (19)	40 (16)	30 (12)	229
1242	TROUT LAKE	15 (6)	8 (3)	43 (17)	23 (9)	13 (5)	8 (3)	110
1243	LAKE WEOHYAKAPKA	75 (30)	91 (36)	83 (33)	88 (35)	74 (29)	84 (33)	495
1246	LAKE YALE	98 (39)	58 (23)	90 (36)	63 (25)	83 (32)	75 (30)	467
1247	LAKE MUNSON	8 (3)	5 (2)	8 (3)	8 (3)	16 (6)	13 (5)	58
1248	LAKE SEMINOLE	35 (14)	48 (19)	35 (14)	10 (4)	69 (27)	63 (25)	260
1249	LAKE LAWNE	0 (0)	0 (0)	0 (0)	20 (8)	43 (17)	35 (14)	98
1250	LAKE TARPON	83 (33)	98 (38)	100 (40)	90 (36)	60 (23)	60 (24)	491
1252	LAKE ELOISE	30 (12)	50 (20)	63 (25)	28 (11)	16 (6)	20 (8)	207
1258	LAKE JESSIE	73 (29)	88 (35)	88 (35)	60 (24)	26 (10)	84 (33)	419
1261	EAST LAKE TOHOPEKALIGA	80 (32)	98 (38)	93 (37)	98 (39)	55 (22)	99 (39)	523
1264	PAYNE'S PRAIRIE LAKE (NO	11 (4)	65 (26)	25 (10)	15 (6)	90 (35)	0 (0)	206

LAKES RANKED BY INDEX NOS.

RANK	LAKE CODE	LAKE NAME	INDEX NO
1	1230	LAKE MINNEOLA	579
2	1261	EAST LAKE TOHOPEKALIGA	523
3	1229	LAKE MINNEHAHA	517
4	1243	LAKE WEOHYAKAPKA	495
5	1250	LAKE TARPON	491
6	1221	LAKE ISTOKPOGA	477
7	1246	LAKE YALE	467
8	1224	LAKE KISSIMMEE	455
9	1258	LAKE JESSIE	419
10	1219	LAKE HORSESHOE	406
11	1215	LAKE HAINES	396
12	1238	LAKE SOUTH	386
13	1232	LAKE OKEECHOBEE	368
14	1228	LAKE MARION	366
15	1206	LAKE CRESCENT	346
16	1234	LAKE POINSETT	342
17	1207	DOCTORS LAKE	341
18	1236	LAKE REEDY	337
19	1211	LAKE GIBSON	324
20	1208	LAKE DORA	297
21	1239	LAKE TALQUIN	294
22	1202	LAKE APOPKA	280
23	1212	GLENADA LAKE	276
24	1214	LAKE GRIFFIN	273
25	1240	LAKE THONOTOSASSA	266
26	1248	LAKE SEMINOLE	260
27	1210	LAKE GEORGE	256
28	1241	LAKE TOHOPEKALIGA	229

LAKES RANKED BY INDEX NOS.

RANK	LAKE CODE	LAKE NAME	INDEX NO
29	1231	LAKE MONROE	215
30	1217	LAKE HANCOCK	213
31	1252	LAKE ELOISE	207
32	1264	PAYNE'S PRAIRIE LAKE (NO	206
33	1220	LAKE HOWELL	201
34	1203	LAKE BANANA	200
35	1223	LAKE JESSUP	184
36	1201	ALLIGATOR LAKE	130
37	1242	TROUT LAKE	110
38	1249	LAKE LAWNE	98
39	1247	LAKE MUNSON	58
40	1227	LAKE LULU	34
41	1209	LAKE EFFIE	31

APPENDIX B

CONVERSION FACTORS

CONVERSION FACTORS

Hectares x 2.471 = acres

Kilometers x 0.6214 = miles.

Meters x 3.281 = feet

Cubic meters x 8.107×10^{-4} = acre/feet

Square kilometers x 0.3861 = square miles

Cubic meters/sec x 35.315 - cubic feet/sec

Centimeters x 0.3937 = inches

Kilograms x 2.205 = pounds

Kilograms/square kilometer x 5.711 = lbs/square mile

APPENDIX C

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR FLORIDA 8/25/75

LAKE CODE 1239 LAKE TALQUIN

TOTAL DRAINAGE AREA OF LAKE(SQ KM) 4454.8

TRIBUTARY	SUB-DRAINAGE AREA(SQ KM)	NORMALIZED FLOWS(CMS) JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1239A1	4454.8	50.26	65.86	86.59	87.36	37.75	32.17	36.76	44.91	39.50	30.41	21.04	37.60	47.39
123981	86.0	1.19	1.90	1.70	2.89	1.19	1.10	1.30	0.79	1.59	0.99	1.10	1.50	1.43
1239C1	844.3	12.66	15.97	20.05	19.91	10.28	8.75	9.91	11.19	9.71	8.52	7.42	10.28	12.03
123901	30.8	0.42	0.68	0.59	1.02	0.42	0.40	0.45	0.28	0.57	0.37	0.40	0.54	0.51
1239E1	3030.3	31.86	45.17	62.13	58.76	22.60	16.68	21.12	25.94	20.27	15.89	11.75	22.74	29.48
1239Z2	300.4	4.13	2.15	2.12	4.79	3.26	5.24	3.96	6.71	7.36	4.64	0.37	2.55	3.95

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 4454.8
SUM OF SUB-DRAINAGE AREAS = 4291.9

TOTAL FLOW IN = 570.21
TOTAL FLOW OUT = 570.22

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
1239A1	3	73	106.19	17	86.37				
	4	73	291.66	13	311.49				
	5	73	111.29	17	42.76				
	6	73	139.32	15	150.36				
	7	73	40.78	13	45.02				
	8	73	49.55	17	49.55				
	9	73	25.43	14	30.02				
	10	73	12.18	12	6.31				
	11	73	20.02	16	6.54				
	12	73	55.02	14	56.63				
	1	74	39.33	18	54.37				
	2	74	66.88	15	96.84				
123981	3	73	3.17	17	3.68				
	4	73	5.55	13	1.50				
	5	73	1.39	17	0.51				
	6	73	1.90	15	1.59				
	7	73	1.30	13	0.91				
	8	73	1.70	17	1.70				
	9	73	1.50	14	1.78				
	10	73	1.10	12	1.10				
	11	73	1.10	16	0.91				
	12	73	1.30	14	1.10				
	1	74	1.19	18	0.91				
	2	74	1.10	15	0.91				

TRIBUTARY FLOW INFORMATION FOR FLORIDA 8/25/75

LAKE CODE 1239 LAKE TALQUIN

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
1239C1	3	73	27.84	17	19.06				
	4	73	56.29	13	24.81				
	5	73	15.06	17	7.87				
	6	73	14.81	15	18.09				
	7	73	6.17	13	4.98				
	8	73	8.24	17	11.52				
	9	73	12.88	14	8.01				
	10	73	4.02	12	3.26				
	11	73	6.20	16	3.94				
	12	73	9.03	14	5.52				
	1	74	11.50	18	8.18				
	2	74	18.15	15	10.85				
1239D1	3	73	1.13	17	1.33				
	4	73	1.98	13	0.54				
	5	73	0.51	17	0.17				
	6	73	0.68	15	0.57				
	7	73	0.45	13	0.31				
	8	73	0.59	17	0.59				
	9	73	0.54	14	0.65				
	10	73	0.40	12	0.40				
	11	73	0.40	16	0.31				
	12	73	0.45	14	0.40				
	1	74	0.42	18	0.31				
	2	74	0.40	15	0.31				
1239E1	3	73	56.52	17	59.86				
	4	73	226.25	13	265.33				
	5	73	84.78	17	34.89				
	6	73	112.39	15	117.71				
	7	73	17.41	13	14.10				
	8	73	25.06	17	20.76				
	9	73	9.09	14	14.16				
	10	73	4.45	12	4.81				
	11	73	4.13	16	3.06				
	12	73	6.68	14	4.39				
	1	74	22.06	18	22.26				
	2	74	79.91	15	176.10				
1239Z2	3	73	12.20	17	14.10				
	4	73	24.18	13	6.48				
	5	73	6.46	17	2.29				
	6	73	6.60	15	5.55				
	7	73	3.00	13	2.07				
	8	73	4.02	17	4.02				
	9	73	5.69	14	6.82				
	10	73	2.10	12	2.10				
	11	73	2.92	16	2.38				
	12	73	4.11	14	3.48				
	1	74	4.93	18	3.68				
	2	74	7.45	15	6.09				

APPENDIX D

PHYSICAL and CHEMICAL DATA

STORET RETRIEVAL DATE 75/08/25

123901
30 23 27.0 084 38 41.0
LAKE TALQUIN
12039 FLORIDA

11EPALES
3

2111202
0035 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/20	11	30 0000	29.5		30	58	6.60	17	0.180	1.000	0.100	0.028
	11	30 0006	29.2	5.9		50	6.70	17	0.140	0.600	0.100	0.024
	11	30 0015	27.6	3.7		50	6.50	15	0.210	0.600	0.160	0.037
	11	30 0022	27.1	3.0		50	6.30	15	0.220	0.800	0.180	0.043
	11	30 0031	26.1	1.6		50	6.50	16	0.200	0.700	0.170	0.028
73/08/31	09	10 0000	30.0		38	57	7.00	10	0.100	1.200	0.100	0.019
	09	10 0005	29.9	6.6		58	6.80	10K	0.070	0.700	0.070	0.017
	09	10 0015	29.9	6.4		57	6.60	10K	0.090	0.600	0.100	0.014
	09	10 0020	29.5	4.4		58	6.50	10	0.100	0.800	0.090	0.014
73/11/05	08	22 0000	20.7		48	45	7.00	14	0.120	0.700	0.070	0.030
	08	22 0005	20.7	4.2		45	6.70	10	0.120	0.400	0.090	0.033
	08	22 0015	20.6	4.4		45	6.70	12	0.120	0.400	0.080	0.028
	08	22 0030	20.6	4.2		42	6.80	13	0.140	0.400	0.090	0.038

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/20	11	30 0000	0.109	4.9
	11	30 0006	0.103	
	11	30 0015	0.126	
	11	30 0022	0.121	
	11	30 0031	0.128	
73/08/31	09	10 0000	0.073	48.8
	09	10 0005	0.045	
	09	10 0015	0.045	
	09	10 0020	0.049	
73/11/05	08	22 0000	0.075	5.6
	08	22 0005	0.074	
	08	22 0015	0.073	
	08	22 0030	0.084	

K VALUE KNOWN TO BE
LESS THAN INDICATED

42

STORET RETRIEVAL DATE 75/08/25

123902
30 25 30.0 084 34 10.0
LAKE TALQUIN
12039 FLORIDA

11EPALES 2111202
3 0032 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/20	12 00	0000	27.3		24	50K	6.30	10K	0.210	0.800	0.120	0.029
	12 00	0006	27.0	3.6		50K	6.30	10K	0.170	0.700	0.140	0.031
	12 00	0015	26.6	3.1		50K	6.30	16	0.220	0.700	0.190	0.048
	12 00	0028	26.4	3.1		50K	6.40	15	0.220	0.800	0.160	0.031
73/08/31	09 30	0000	28.9		32	60	6.50	10K	0.150	1.000	0.140	0.014
	09 30	0005	28.8	4.8		59	6.40	11	0.130	0.600	0.120	0.020
	09 30	0015	28.7	4.6		60	6.30	11	0.180	0.700	0.110	0.023
	09 30	0030	27.5	0.6		82	6.30	17	0.520	1.100	0.100	0.054
73/11/05	08 45	0000	21.1		59	52	7.00	13	0.050	0.400	0.030	0.015
	08 45	0005	20.9	9.2		53	7.00	12	0.040	0.300	0.030	0.014
	08 45	0015	19.3	6.6		58	6.90	10K	0.090	0.200K	0.090	0.030

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/20	12 00	0000	0.121	2.1
	12 00	0006	0.119	
	12 00	0015	0.134	
	12 00	0028	0.127	
73/08/31	09 30	0000	0.062	18.2
	09 30	0005	0.061	
	09 30	0015	0.066	
	09 30	0030	0.134	
73/11/05	08 45	0000	0.057	5.0
	08 45	0005	0.059	
	08 45	0015	0.183	

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 75/08/25

123903
30 26 27.0 084 31 41.0
LAKE TALQUIN
12039 FLORIDA

11EPALES
3

2111202
0025 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/20	12 40	0000	26.8		22	50K	6.20	10K	0.220	0.800	0.170	0.039
	12 40	0006	26.7	3.6		50K	6.30	10K	0.170	0.500	0.130	0.041
	12 40	0015	26.4	3.3		50K	6.20	10K	0.220	0.500	0.150	0.046
	12 40	0021	26.1	3.4		50K	6.20	10K	0.200	0.600	0.140	0.034
73/08/31	09 45	0000	28.6		41	64	6.40	10	0.260	1.000	0.300	0.051
	09 45	0005	28.4	4.2		64	6.30	11	0.300	0.800	0.400	0.032
	09 45	0015	28.3			64	6.20	11	0.280	0.900	0.360	0.032
	09 45	0020	28.3	4.0		66	6.40	11	0.310	0.900	0.480	0.034
73/11/05	09 01	0000	20.6		58	72	7.20	10K	0.050	0.300	0.070	0.028
	09 01	0004	20.5	8.4		71	7.10	10K	0.060	0.200K	0.070	0.032
	09 01	0008	19.4	7.2		69	7.10	12	0.080	0.200K	0.100	0.041

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/20	12 40	0000	3.120	0.7
	12 40	0006	0.115	
	12 40	0015	0.114	
	12 40	0021	0.117	
73/08/31	09 45	0000	0.078	4.6
	09 45	0005	0.068	
	09 45	0015	0.068	
	09 45	0020	0.069	
73/11/05	09 01	0000	0.081	7.5
	09 01	0004	0.075	
	09 01	0008	0.075	

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 75/08/25

123904
30 27 35.0 084 28 22.0
LAKE TALQUIN
12039 FLORIDA

11EPALES
3

2111202
0007 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/20	13 00	0000	26.3		18	50K	8.30	10K	0.220	0.700	0.160	0.045
	13 00	0004	26.3			50K	7.80	10K	0.160	0.600	0.150	0.040
73/08/31	10 00	0000	28.8	3.8	36	101	6.80	20	0.110	0.700	0.220	0.062
73/11/05	09 15	0000	19.1	6.4	48	150	7.10	33	0.040	0.300	0.030	0.031
	09 15	0001	19.1			150						
	09 15	0004	18.8	6.6		152	7.00	39	0.060	0.200K	0.230	0.062
				6.8								

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/20	13 00	0000	0.140	1.4
	13 00	0004	0.141	
73/08/31	10 00	0000	0.136	11.0
73/11/05	09 15	0000	0.087	4.0
	09 15	0004	0.122	

K VALUE KNOWN TO BE
LESS THAN INDICATED

APPENDIX E

TRIBUTARY AND WASTEWATER TREATMENT PLANT DATA

STORET RETRIEVAL DATE 75/08/25

1239A1
30 23 00.0 084 39 30.0
OCHLOCKONEE RIVER
12069 15 LAKE TALQUIN
O/LAKE TALQUIN
ST HWY 500 BRDG NEAR JACKSON BLUFF
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/17	09 28		0.126	2.200	0.091	0.052	0.095
73/04/13	14 55		0.075	0.660	0.044	0.075	0.115
73/05/17	08 20		0.070	4.000	0.189	0.072	0.110
73/06/15	09 51		0.069	0.650	0.078	0.064	0.105
73/07/13	09 55		0.011	0.580	0.092	0.052	0.125
73/08/17	09 46		0.015	1.300	0.090	0.034	0.075
73/09/14	10 35		0.078	0.670	0.220	0.018	0.055
73/10/12	09 50		0.038	0.625	0.105	0.017	0.060
73/11/16	10 00		0.056	0.250	0.032	0.024	0.050
73/12/14	10 45		0.092	0.400	0.020	0.020	0.060
74/01/18	10 45		0.420	0.400	0.056	0.064	0.120
74/02/15	08 46		0.400	0.700	0.055	0.070	0.145

STORET RETRIEVAL DATE 75/08/25

123981
30 27 00.0 084 38 30.0
OCKLAWAHA CREEK
12 15 LAKE TALQUIN
T/LAKE TALQUIN
ST HWY 127 BRDG
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/17	09	43	0.016	0.500	0.019	0.015	0.015
73/04/13	15	20	0.012	0.420	0.012	0.007	0.007
73/05/17	08	35	0.013	6.200	0.176	0.008	0.020
73/06/15	10	12	0.036	3.850	0.132	0.011	0.015
73/07/13	10	20	0.017	0.230	0.023	0.009	0.015
73/08/17	10	06	0.017	1.150	0.140	0.012	0.015
73/09/14	11	10	0.020	0.140	0.091	0.015	0.015
73/10/12	10	15	0.010K	0.150	0.014	0.008	0.015
73/11/16	10	30	0.010K	0.400	0.016	0.012	0.012
73/12/14	11	25	0.012	0.200	0.020	0.010	0.012
74/01/18	10	45	0.020	0.200	0.020	0.012	0.012
74/02/15	09	04	0.024	1.000	0.070	0.010	0.010

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 75/08/25

1239C1
30 30 30.0 084 31 30.0
LITTLE RIVER
12 7.5 QUINCY
T/LAKE TALQUIN
RD SE OF MT PILGRIM CHURCH
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/17	10	18	0.320	0.720	0.060	0.073	0.175
73/04/13	15	50	0.910	1.080	0.350	0.059	0.140
73/05/17	12	20	0.640	0.960	0.390	0.077	0.140
73/06/15	10	41	0.330	1.500	0.050	0.074	0.180
73/07/13	11	00	1.460	0.790	0.336	0.075	0.160
73/08/17	10	32	2.140	1.800	0.570	0.081	0.330
73/09/14	11	40	1.260	0.910	0.170	0.090	0.390
73/10/12	10	50	1.220	0.550	0.030	0.075	0.165
73/11/16	10	55	1.850	1.500	0.148	0.064	0.143
73/12/14	11	55	1.600	0.700	0.420	0.068	0.125
74/01/18	09	57	1.010	0.600	0.044	0.064	0.175
74/02/15	10	31	1.180	0.800	0.145	0.040	0.155

STORET RETRIEVAL DATE 75/08/25

12390I
30 28 00.0 084 35 30.0
BEAR CREEK
12 15 LAKE TALQUIN
T/LAKE TALQUIN
RD BRDG RUNNING N FROM BRADWELL SCHOOL
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/17	09 58		0.020	0.630	0.013	0.075	0.140
73/04/13	15 32		0.039	0.400	0.009	0.045	0.055
73/05/17	11 45		0.060	6.900	0.252	0.046	0.065
73/06/15	10 24		0.036	1.470	0.039	0.063	0.085
73/07/13	10 40		0.029	0.400	0.031	0.056	0.095
73/08/17	10 17		0.030	1.150	0.067	0.063	0.095
73/09/14	11 25		0.023	0.150	0.015	0.063	0.100
73/10/12	10 30		0.042	0.250	0.011	0.061	0.090
73/11/16	10 45		0.012	0.700	0.184	0.070	0.095
73/12/14	11 35		0.010K	0.100	0.020	0.052	0.065
74/01/18	10 15		0.056	0.200	0.016	0.060	0.090
74/02/15	10 14		0.052	0.400	0.025	0.040	0.090

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 75/08/25

1239E1
30 28 30.0 084 24 30.0
OCHLOCKONEE RIVER
12 15 TALLAHASSEE
T/LAKE TALQUIN
ST HWY 10 BRDG NEAR OCHLOCKONEE
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/03/17	10 36		0.140	0.780	0.050	0.077	0.130
73/04/13	16 05		0.058	0.690	0.027	0.063	0.105
73/05/17	12 40		0.210	1.800	0.335	0.089	0.125
73/06/15	11 17		0.147	0.960	0.061	0.105	0.125
73/07/13	11 20		0.370	0.480	0.072	0.098	0.155
73/08/17	10 49		0.294	2.500	0.357	0.110	0.175
73/09/14	12 00		0.420	0.345	0.047	0.126	0.190
73/10/12	11 15		0.520	0.450	0.031	0.189	0.270
73/11/16	11 30		0.028	1.000	0.032	0.136	0.240
73/12/14	12 15		0.690	0.500	0.076	0.264	0.330
74/01/18	09 40		0.330	0.700	0.048	0.140	0.230
74/02/15	10 49		0.032	0.700	0.025	0.045	0.120

STORET RETRIEVAL DATE 75/08/25

1239CA TF1239CA P008272
30 34 30.0 084 35 00.0
QUINCY
12069 1-250000 TALLAHA
T/LAKE TALQUIN
QUINCY CREEK
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/02/08	08 00								
CP(T)-			1.580	19.800	9.800	6.100	8.100	0.880	1.020
73/02/08	19 00								
73/03/08	08 00								
CP(T)-			1.200	17.000	11.200	4.200	5.600	1.410	0.910
73/03/08	20 00								
73/04/10	08 00								
CP(T)-			1.500	9.200	4.900	2.300	3.200	1.750	1.200
73/04/10	20 00								
73/05/08	08 00								
CP(T)-			0.260	21.000	12.400	7.140	8.400	0.780	0.760
73/05/08	20 00								
73/06/13	09 00								
CP(T)-			0.720	7.500	3.320	3.220	4.500	1.430	0.930
73/06/13	21 00								
73/07/10	08 00								
CP(T)-			0.360	38.000		5.200	6.000	0.680	0.640
73/07/10	20 00								
73/08/13	10 00								
CP(T)-			0.140	21.000	5.000	2.940	3.100	0.720	0.786
73/08/13	22 00								
73/09/06	09 00								
CP(T)-				18.500		5.500	7.200	0.710	0.750
73/09/06	21 00								
73/10/25	08 00								
CP(T)-			2.200	12.000	8.400	5.400	7.000	0.610	0.660
73/10/25	20 00								
73/11/20	08 00								
CP(T)-			3.150	19.000	8.300	5.900	8.200	0.540	0.570
73/11/20	20 00								
73/12/13	09 00								
CP(T)-			2.500	16.500	7.500	5.700	6.600	0.500	0.540
73/12/13	21 00								
74/01/08	08 00								
CP(T)-			3.100	12.000	7.560	5.400	8.000	0.630	0.570
74/01/08	20 00								

STORET RETRIEVAL DATE 75/08/25

1239CA TF1239CA P008272
30 34 30.0 084 35 00.0
QUINCY
12069 1-250000 TALLAHA
T/LAKE TALQUIN
QUINCY CREEK
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
74/02/07 CP(T)- 74/02/07	08 00 20 00		0.120	18.000	8.200	4.700	6.500	0.620	0.520